

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

Applicant(s):	Mazzurco, et al.	Docket:	135815
Serial No.:	09/858,099	Art Unit:	2661
Filed:	May 15, 2001	Examiner:	Ian N. Moore
Title:	Common Protection Architecture for Optical Network		

PRE-APPEAL BRIEF REQUEST FOR REVIEW

Commissioner for Patents
P. O. Box 1450
Alexandria, VA 22313-1450

Dear Commissioner:

It is respectfully requested that a review be made of the final rejection prior to filing of the Appeal Brief. This request is being filed simultaneously with a Notice of Appeal. No amendments are filed with this request. Applicant believes that there are clear errors in the final rejection mailed March 8, 2006 (Final Office Action); and thus, the final rejection has omissions of one or more essential elements needed for a prima facie rejection for the reasons stated below.

The Office Action rejected claims 1, 2, 13, 14, 16 and 17 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,870,212 to Nathan et al. (the Nathan reference) in view of U.S. Patent No. 6,414,765 to Li et al (the Li reference). However, the Nathan reference and the Li reference, either alone or in combination, fail to teach or suggest the requirements of the claims.

Independent Claim 1 and dependent claims 2 through 7

Claim 1 states, “a pair of network elements; two or more working spans coupled between said pair of network elements for carrying communications traffic between said pair of network elements, each working span carrying said communications traffic over a plurality of channels associated with one or more rings; a shared protection span coupled between said network elements, said shared protection span providing a plurality of channels; wherein said network elements include circuitry for concurrently switching communication traffic on rings associated with different working spans to respective channels of said shared protection span.”

As seen in Figure 4 of the specification and explained in the specification at pages 7-8, paragraphs 27-29, each of the working spans 16ab support a plurality of n wavelengths or n distinct channels, and the shared protect span 18ab includes a plurality of shared protection

channels SP1 . . . SPn. Also shown in Figure 8, Figure 9 and described in the specification on pages 9 through 11, paragraphs 32 through 38, the shared protect span 18ab can be used to correct simultaneous failures on multiple ring networks. For example, in Figure 8, a failure of λ_{12} on span 16de in a first ring will be switched to the protection spans by network element 12e in the first ring and carried over a first channel SP2 of the shared protection span 18ab. Another failure of λ_{12} on span 16hi in a second ring will be switched by network element 12h to the protection spans in the second ring and carried over a second channel SP1 of the shared protection span 18ab. Thus, communication traffic on rings associated with different working spans are concurrently switched to respective channels of the shared protection span. The present invention has significant advantages over the prior art, as explained at page 3, paragraph 11. In the prior art, such as WO99/23773 to Elahmadi et al., a shared protection span can only be used to protect against a failure on one ring at a time. Traffic outage will occur if another failure occurs on another ring.

The Nathan reference and the Li reference, either alone or in combination, fail to teach or suggest the requirements of the claims. First, with respect to the Nathan reference, it does not disclose the requirement of claim 1, *inter alia*, of: “wherein said network elements include circuitry for concurrently switching communication traffic on rings associated with different working spans to respective channels of said shared protection span.” The Nathan reference only describes that spare optical channel 860 in Figures 8, 9 and 10 can be used to protect against a failure on one ring at a time. As seen in Figures 8, 9 and 10, and stated at column 7, lines 12 and 13 (emphasis added), “Spare optical channel 860 can be optically coupled into network 802 *or* network 804 by OCCS 852 and 834.” Thus, as stated at column 7, lines 13 through 19, the spare optical channel 860 can be used by network 802 if there is a break between nodes A and F, nodes E and F, or nodes D and E. *Alternatively*, network 804 may use the spare optical channel 860 if there is a break between nodes A and B, nodes B and C or nodes C and D. The spare optical channel 860 may not be used concurrently for switching communication on traffic on both network rings 802 and 804. And since there is no description of spare channel 860 supporting multiple wavelengths, such an interpretation is inoperable. Thus, the Nathan reference teaches away from the present invention and is in fact inoperable to meet the requirements of the claims.

Similarly, the Li reference does not disclose the requirement of claim 1, *inter alia*, of “wherein said network elements include circuitry for concurrently switching communication traffic on rings associated with different working spans to respective channels of said shared protection span.” The Final Office Action states, last paragraph page 15 to first paragraph page 16, that, “Li teaches switching circuitry (See Fig. 4B, protection switch 10) for concurrently coupling channels to respective channels of said shared protection span (also see Fig. 4A; col. 6, line 60 to col. 7, line 16; note that protection switch supports the protection of each channel wavelength for concurrent switching).” However, the Li reference nowhere discloses concurrently switching channels to a shared protection span as claimed in the Office Action. The Li reference only discloses a single optical shared protection ring, as seen in Figure 2A and 3A and 4A, and described at column 4, lines 38 through 41. The single optical shared protection ring described in the Li reference has 2 fibers. As described at column 4, lines 44 through 49, Fiber 1 propagates working wavelengths and protection wavelengths in a counter clockwise direction. Fiber 2 propagates working wavelengths and protection wavelengths in a clockwise direction. So Fiber 1 working wavelengths can be switched to Fiber 2 protection wavelengths and Fiber 2 working wavelengths are switched to Fiber 1 protection wavelengths, as described at column 6, line 60 through column 7 line 3. There is no shared protection span or shared protection switch for concurrently switching working wavelengths to the same protection span. The only switching occurring in the Li reference is within a single ring from the working channels on one fiber in the ring to the protection channels in the other fiber of the ring. There is no sharing of channels on a single protection span among the working channels of different rings. Thus, the Li reference necessarily fails to disclose concurrently switching communication traffic on rings associated with different working spans to respective channels of said shared protection span, as stated in the claims.

Furthermore, the combination of the Nathan reference and the Li reference fails to suggest the requirement of claim 1, *inter alia*, of “wherein said network elements include circuitry for concurrently switching communication traffic on rings associated with different working spans to respective channels of said shared protection span.” As explained above, the Nathan reference only describes that spare optical channel 860 in Figures 8, 9 and 10 can be used

to protect against a failure *on one ring at a time*, and the Li reference only describes concurrently switching within a single ring from the working channels on one fiber in the one ring to the protection channels in the other fiber of the one ring. Thus, the combination of the Li reference and the Nathan reference teaches or suggests switching only one working channel to one protection channel as described in both the Nathan and Li reference. So combining the switch described in the Li reference with the Nathan reference would at most teach or suggest adding another protection span next to 860 in the Nathan reference and concurrently switching from different working channels 858, 862 to different protection spans (860 and added protection span from Li).

Neither reference contemplates, describes or suggests a shared protection span for concurrently switching traffic from rings associated with different working spans, e.g. sharing one protection span among different working spans concurrently. “The court must be ever alert not to read obviousness into an invention on the basis of the applicant's own statements; that is, we must view the prior art without reading into that art appellant's teachings.” *Application of Nomiya*, 184 U.S.P.Q. 607, 612 (Cust. & Pat.App. 1975). Only the present specification teaches network elements that include circuitry for concurrently switching communication traffic on rings associated with different working spans to respective channels of said shared protection span. For these reasons, the Nathan reference and the Li reference, either alone or in combination, fail to teach or suggest the requirements of the claims.

Independent Claim 8 and dependent claims 9 through 12

Claims 8 through 12 were rejected under 35 U.S.C. 103(a) as being unpatentable over the Nathan reference in view of the Li reference and further in view of Fee (U.S. Patent No. 6038044). With respect to the Nathan and Li references, they do not disclose the requirement of claim 8, *inter alia*, of “in the event of failures in channels associated with two or more rings associated with different working spans, concurrently transferring communication traffic associated with each of said two or more rings over said shared protection span,” for the reasons stated above with respect to claim 1. With respect to the Fee reference, it teaches away from the present invention. It explicitly states that in the event of failures, at column 6, lines 55 and 57 that, “To recover from more than failure in ring 202, ring traffic will be switched onto spare

capacity within mesh network 102". It illustrates that each working port is routed to different spare optical channels that are "spare capacity within mesh network 102," as stated at column 6, lines 61 through 63. So the Fee reference teaches away from the present invention by teaching switching working paths to different spare capacity paths. There is no concurrently transferring communication traffic associated with two or more rings over a shared protection span as in Claim 8.

Independent Claim 13 and dependent claims 14 through 18

The Office Action rejected claims 13, 14, 16 and 17 under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 5,870,212 to Nathan et al. (the Nathan reference) in view of U.S. Patent No. 6414765 to Li et al (the Li reference). With respect to the Nathan and Li references, they do not disclose the requirement of claim 13, *inter alia*, of "an switching circuitry for concurrently coupling channels from different incoming protection spans to a shared protection span," for the reasons stated above with respect to claim 1.

CONCLUSION

For the above reasons, the foregoing amendment places the Application in condition for allowance. Therefore, it is respectfully requested that the rejection of the claims be withdrawn and full allowance granted. Should the Examiner have any further comments or suggestions, please contact Jessica Smith at (972) 477-9109.

Respectfully submitted,

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